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FOREIGN PATENT DOCUMENTS

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CSM	U	₩O 93/02209 A1	02/04/93	PCT				
	V	WO 97/15588 A1	05/01/97	PCT				
	l	EP 0786 519 A2	07/30/97	Europe				
	ľ	WO 98/58961 A1	12/30/98	PCT				
		X O 99/36422 A1	07/22/99	PCT				
	V	WO 99/47639 A2	09/23/99	PCT				
	U	WO 99/47662 A1	09/23/99	PCT				
	N	WO 00/12678 A2	03/09/00	PCT				
	~	WO 00/12678 A3	03/09/00	PCT				
	\ \	WO 01/16292 A2	03/08/01	PCT				
V								

OTHER DOCUMENTS (Including Authors, Title, Date, Pertinent Papers, etc.)

Examiner Initial		Document Description
CSVM	·	Bartlett et al., "CAVEAT: A program to facilitate the structure-derived design of biologically active molecules," <i>Molecular Recognition: Chemical and Biological Problems</i> , Royal Society of Chemistry, Special Pub No. 78:182-196 (1989).
	ί.	Benson et al. "An enzyme-substrate complex involved in bacterial cell wall biosynthesis," <i>Nat Struct Biol.</i> 1995 Aug;2(8):644-53.
\forall	\sim	Blundell et al., <i>Protein Crystallography</i> , Academic Press, New York, NY; title page, publication page, and table of contents only, 8 pages (1976).

EXAMINER 2	Mlalf	Date Considered September 16, 2002
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*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Examiner Initial		Document Descripti	Technol	0 2002				
ANIP	Böhm, "Tenzyme in	Document Description The computer program LUDI: a new inhibitors," J. Comput. Aided Mol. Description	method for the de novo design e s. 1992 Feb;6(1):61-78.	V Center 2100				
	Brünger, Brünger, NMR (titl	X-plor Manual (Version 3.1) A System e page, publisher's page, and table of w Haven, CT, 1992; 13 pgs.	n for X-ray Crystallography and	_				
& TR		ative Computational Project, No. 4, "Trystallography" <i>Acta Cryst</i> . 1994; <i>D50</i>						
	Simultane	t al., "Improvement of Macromolecul eous Application of Real and Reciprogr D Biol Crystallogr. 1993 Jan 1;490	cal Space Constraints," Acta	·				
	1 2.1/	t al., "Miscellaneous algorithms for d gr D Biol Crystallogr. 1998 Jul 1;54(
	satisfy the	al., "HOOK: a program for finding not chemical and steric requirements of <i>Struct. Funct. Genet.</i> 1994 Jul; 19(3):	a macromolecule binding site,"					
	1 9 1/	ETOR: hardware-lighted three-dimer ations of macromolecules," <i>J Mol Gra</i>		8.				
	Finzel, "I 277(B):23	LORE: exploiting database of known 30-42.	structures," Meth. Enzymol. 199	7;				
		al., "SPROUT: a program for structure 1993 Apr;7(2):127-53.	e generation," J. Comput. Aided					
	binding si	Goodford, "A computational procedure for determining energetically favorable binding sites on biologically important macromolecules," <i>J Med Chem.</i> 1985 Jul; 28(7):849-57.						
		Goodsell et al., "Automated docking of substrates to proteins by simulated annealing," <i>Proteins: Struct. Funct. Genet.</i> 1990;8(3):195-202.						
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	son, "Determination of macromolecular of synchrotron radiation," <i>Science</i> .						
\forall		t al., "Structural gene for NAD synthe ol. 1988 May;170(5):2113-20.	etase in Salmonella typhimurium	,,				

EXAMINER 1 1	Date Considered	
C.M./6	September 16,	2002

*Examiner: Initial if citation considered, whether or not citation is in conformance with MPE 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Atty. Docket No.: 6315.N	Serial No.: 09/772,598

Applicant(s): T. Benson et al. Confirmation No.: 2967

Group: 2183 Filing Date: January 30, 2001

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Examiner Initial	2 %	Document Description Technology	10 2002
11	8 50EX 30.7	Jiang et al., "Protein hydration observed by X-ray diffraction. Solvation properties of penicillopepsin and neuraminidase crystal structures," <i>J. Mol. Biol.</i> 1994 Oct 14;243(1):100-15.	Center 2100
TE .	J. R. K.C.	Kraulis, "MOLSCRIPT: a program to produce both detailed and schematic plots	

of protein structures," J. Appl. Cryst. 1991 Oct;24:946-950. Kuntz et al., "A geometric approach to macromolecule-ligand interactions," J. Mol. Biol. 1982 Oct 25;161(2):269-88. Laemmli, "Cleavage of Structural Proteins during the Assembly of the Head of Bacteriophage T4," Nature, 1970 Aug 15;227(259):680-85. Laskowski, et al., "PROCHECK: a program to check the stereochemical quality of protein structures," J. Appl Cryst. 1993 Apr;26:283-291 Lattman, "Use of the rotation and translation functions," Methods Enzymol. **~**¥1985;115:55-77. Lauri et al., "CAVEAT: a program to facilitate the design of organic molecules," J Comput Aided Mol Des. 1994 Feb;8(1):51-66. Martin, "3D database searching in drug design," J. Med. Chem. 1992 Jun 12; **V** 35(12):2145-54. Meng et al., "Automated docking with grid-based energy evaluation," J. Comp. Chem, 1992 May;13(4):505-524. Merritt et al., "Raster3D Version 2.0. A Program for Photorealistic Molecular Graphics", Acta Crystallogr D Biol Crystallogr., 1994;50:869-73. Miranker et al., "Functionality maps of binding sites: a multiple copy simultaneous search method," Proteins: Struct. Funct. Genet. 1991;11(1):29-34. Moat et al., "Biosynthesis and salvage pathways of pyridine nucleotides. Coenzymes and cofactors, Pyridine Nucleotide Coenzymes," Eds. D. Dolphin et al. John Wiley & Sons, Inc., New York, 1987; vol. II, part B:1-24. National Institutes of Health, "BLAST 2 Sequences," [online] United States; retrieved October 15, 2001 from the Internet: <URL:http://www.ncbi.nlm.nih.gov/gorf/bl2.html>, 1 pg. Navaza, "AMoRe: an automated package for molecular replacement," Acta Crystallogr A. 1994 Mar;50:157-163.

EXAMINER	Date Considered
OMI	1 + 1 11 2007
C. 14/	September 16, 2002

*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION		Atty. Docket No.: 6315.N	Serial No.: 09/772,598					
	ISCLOSURE	Applicant(s): T. Benson et al.	Confirmation No.: 2967					
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F		Document Description	Technologi	1 0 2002				
Examiner Initial	/		3099	Center 2100				
650	$P \in \mathbb{N}$ Biol Chem.	, "The outB gene of <i>Bacillus subtilis</i> 1995 Mar 17;270(11):6181-5.	codes for NAD synthetase," J	100				
NI I	4/111 m	t al., "Automatic creation of drug ca ucture. Starting point for artificial le 1):8985-90.	ndidate structures based on ead generation," <i>Tetrahedron</i> ,					
SALES S	, Isomorphoi Study Week	Otwinowski, "Maximum likelihood refinement of heavy atom parameters," Isomorphous replacement and anomalous scattering - Proceedings of the CCP4 Study Weekend 25-26 January 1991, (W. Wolf et al., Eds.) Science and Engineering Research Counsel, Daresbury Laboratory, Warrington, U.K. (1991) pp. 80-86.						
	Voverexpress	Øzment et al., "Structural study of Escherichia coli NAD synthetase: overexpression, purification, crystallization, and preliminary crystallographic analysis," <i>J. Struct. Biol.</i> 1999 Oct; 127(3):279-82.						
		nan et al., "Crystal structure of globus for nucleosome binding," <i>Nature</i> .						
	[online] Un	collaboratory for Structural Bioinformated States; retrieved October 15, 20 c.rcsb.org/pdb/> 1 page.						
		"Crystal structure of NH3-depende btilis," <i>EMBO J.</i> 1996 Oct 1; <i>15</i> (19):						
	1 6 1/	"Crystallization of NAD+ synthetas 996 Oct;26(2):236-8.	se from Bacillus subtilis,"					
	NAD-aden	Rizzi et al., "A novel deamido-NAD+-binding site revealed by the trapped NAD-adenylate intermediate in the NAD+ synthetase structure," <i>Structure</i> . 1998 Sep 15;6(9):1129-40.						
		et al., "Chemical and biological evoluture. 1974 Jul 19;250(463):194-9.	ution of nucleotide-binding					
	the Use of l	ed., The Molecular Replacement Mon-Crystallographic Symmetry, Int New York, NY; title page, publications (1972).	l. Sci. Rev. Ser. No. 13, Gordon					
V	8ack, "CHA 1988 Dec; (AIN - A Crystallographic Modeling 6(4):224-5.	Program," J Molecular Graphics.					

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Date Considered

*Examiner: Initial if citation considered, whether or not citation is in conformance with MPÉP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	INFORMATION		ATION	Atty. Docket No.: 6315.N	Serial No.: 09/772,598			
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					Tec//201			
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Ch	FF	Eval		al., "Structure solution by iterative p space group P1," Acta Crystallogr I				
V.	M 0	2022 332		al., "BLAST 2 Sequences, a new too equences," <i>FEMS Microbiol Lett.</i> 199	for comparing protein and			
		CHIEF	T/ravis, "Pro Nov 26;262	teins and organic solvents make an extension (5138):1374.	ye-opening mix," Science. 1993			
		بار		et al., "Atomic structures of the huma with FK506 and rapamycin," J Mol B	<u> </u>			
		, i	oenzymes."	"Biosynthesis of salvage pathways of Academic Press, New York; title pathonly, 13 pages (1982)				
		- レ	Willison, "A coli chromo	An essential gene (efg) located at 38.1 some," <i>J Bacteriol</i> . 1992 Sep;174(17)	minutes on the Escherichia			
		້ ໄ		al., "The Escherichia coli efg gene and code for NH3-dependent NAD synthe :3400-2.				
		· v	Wyckoff et al., eds., Methods in Enzymology Vol. 114 - Diffraction Methods for Biological Macromolecules, Academic Press, Orlando, FL; title page, publication page, and table of contents only, 5 pages (1985).					
		l	Wyckoff et al., eds., Methods in Enzymology Vol. 115. Diffraction Methods for Piological Macromolecules, Academic Press, Orlando, FL; title page, publication page, and table of contents only, 4 pages (1985).					
V		ا	Zalkin, "NA	D synthetase," Methods Enzymol. 19	85; <i>113</i> :297-302.			

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*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.